

Toward an Architecture for Monitoring Private Clouds

January 2012 [IEEE Communications Magazine](#)

Cloud computing has emerged as a new model for service delivery. Also emerged are several issues, most of them related to adoption, security and management. Earlier adopters as well as potential users are faced with many management challenges and concerns, some of which concern business decisions, e.g., vendor lock-in while others are related to service operation, e.g. monitoring of network, storage, and computational resources. Despite the fact that the cloud abstracts complexity and technology details, some technological issues must be handled directly by the ones deploying and managing a cloud infrastructure. In private clouds, for instance, a common goal is to take advantage of the existing facilities. One common issue in such a case is having several different Linux distributions, which increases configuration and monitoring complexity. Cloud computing is a type of distributed computing, which means that cloud computing monitoring can benefit from tools and concepts already established in distributed computing management. The authors show that implementing and deploying monitoring solutions on installed infrastructures is viable, including the use of existing tools like:

- Nagios.
- Xen
- Xen virtual machines
- Ethernet network
- System run levels and init.d scripts

They also mention that, even in private clouds, the heterogeneity of computing resources might require some extra effort when implementing the monitoring solution. In summary, the reader can find in this paper some important insights on how to orchestrate a monitoring solution using distributed computing resources and tools in general, as well as a generic cloud monitoring architecture for private clouds. The paper also cites the lack of open source, interoperable management and monitoring tools, denoting a promising development and business area.

Title and author(s) of the original paper in IEEE Xplore:

Title: Toward an architecture for monitoring private clouds

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This paper appears in: Communications Magazine, IEEE

Issue Date: December 2011

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